S/081/61/000/013/018/028
B110/B205

AUTHORS: Vaysberg, K. M., Zizin, V. G.

TITLE: Spectrographic determination of vanadium and nickel in petroleum products

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 13, 1961, 529, abstract 13M324 (Tr. Bashkirsk. n.-i. in-ta ро pererabotke nefti, 1960, vyp. 4, 180 - 185)

TEXT: The weighed portion of the petroleum product was incinerated by the method of dry incineration, and the ash was dissolved in HCl. The acid was evaporated, the chlorides were dissolved in water, and the solution was boiled down to the volume required. In the solution obtained, the content of V and Ni was determined with an ИСП-28 (ISP-28) spectrograph. The 0.02 mm wide slits were illuminated with a three-lens system, and the electrodes were projected onto the intermediate condenser. The spectrum was excited with a condensed spark obtained from an ИГ-3 (IG-3) generator. Titanium was used as a reference element. The results of the spectrum analysis were compared with those of the chemical and

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Spectrographic determination...

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colorimetric analyses. The comparison showed that the accuracy of
analysis is sufficient for practical purposes. [Abstracter's note:
Complete translation.]

Card 2/2

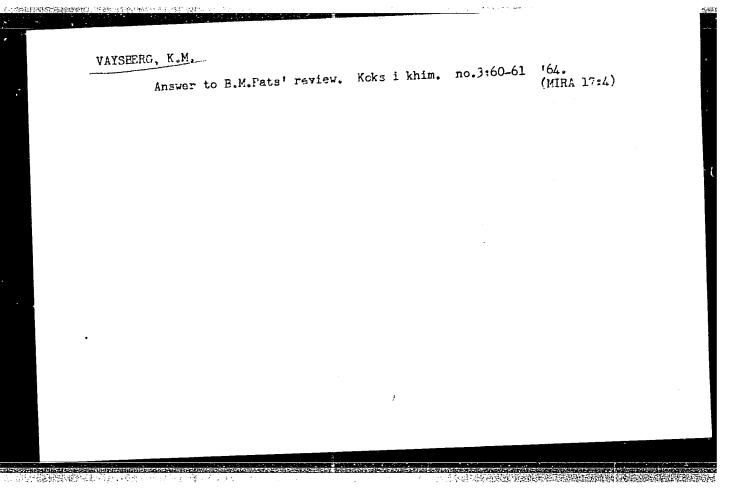SHABALIN, I.I.; KRUGLOV, E.A.; VAYSBERG, K.M.

Spectral determination of naphthalene and its derivatives in gas oil from catalytic cracking. Khim.i tekh.topl. i masel 7 no.11:25-28 N '62.

(MIRA 15:12)

(Petroleum products)   (Naphthalene—Spectra)

KULAKOV, V.N.; VARFOLOMEYEV, D.F.; BONDARENKO, M.F.; KOTOVA, V.N.;
AKHMETOV, I.G.; KOLYCHEV, V.M.; NOSAL', G.I.; KIVA, V.N.;
PANKRATOVA, M.F.; KRUGLOV, E.A.; SHMELEV, A.S.; SHABALIN, I.I.;
SHIRMUKHAMETOV, O.A.; ISYANOV, I.Ya.; RATOVSKAYA, A.A.;
VAYSBERG, K.M.

Technology of the production of naphthalene from the refining
products of eastern oils. Nefteper. i neftekhim. no. 4:30-33
'64.
(MIRA 17:5)

1. Nauchno-issledovatel'skiy institut neftekhimicheskikh
proizvodstv i ordena Lenina Ufimskiy neftepererabatyvayushchiy
zavod.

VAYSBERG, K.M.

Answer to B.M.Fats' review. Koks i khim. no.3:60-61 '64.
(MIRA 17:4)

KRUGLOV, E.A.; VAYSBERG, K.M.; ABRAMOVICH, Z.I.

Investigating the individual composition of the synthetic
fatty acids of petroleum paraffins. Khim. i tekh. topl. i
masel 9 no.5:36-38   5 My'64   (MIRA 17:7)

1. Nauchno-issledovatel'skiy institut neftekhimicheskikh
proizvodstv.

VAYSBERG, K.M.; KRUGLOV, E.A.; KHABIBULLIN, M.F.; SHABALIN, I.I.

Using the gas-liquid chromatography method for studying the various
types of naphthalene. Koks i khim. no.3:44-47 '63.   (MIRA 16:3)
(Naphthalene)   (Gas chromatography)

VAYSBERG, K.M.; SHABALIN, I.I.; KOVALOV, Z.A.; SIRELEVA, M.A.; PETROVA, L.P.

Using gas chromatography and molecular spectroscopy in the
quantitative analysis of naphthalene hydrocarbons $C_{10} - C_{14}$.

Khim. i tekh. topl. i masel 10 no.9:53-57 S '65. (MIRA 18:9)

1. Nauchno-issledovatel'skiy institut neftekhimicheskikh proizvodstv.

PAVLOVA, Yu.N.; VAYSBERG, L.A.

Review of the book "Problems of anesthesiology and surgery
in pulmonary diseases." Probl. tub. 41 no.5:86-88 '63.

(MIRA 17:1)

VAYSBERG, L. A.; ROGACHIKOVA, T. A.

Anesthesia in surgery for laryngeal cancer. Vest. otorin. no.4:
36-39 '61.   (MIRA 15:2)

1. Iz Moskovskoy gorodskoy onkologicheskoy bol'nitsy No. 62
(glavnyy khirurg-onkolog - prof. L. M. Nisnevich)

    (LARYNX—CANCER)   (ANESTHESIA)

SAVONICHEVA, I.P., kand. med. nauk; VAYSBERG, L.A.

Experience in the use of anesthesia with separate intubation
of the main bronchi in the surgical treatment of pulmonary
tuberculosis. Khirurgiia 40 no.3:98-102 Mr '64.
                                                  (MIRA 17:9)
1. Nauchno-issledovatel'skiy institut tuberkuleza (dir.- kand.
med. nauk T.P. Mochalova) Ministerstva zdravookhraneniya RSFSR,
Moskva.

SAVONICHEVA, I.P., kand. med. nauk; VAYSBERG, L.A.

> General anesthesia in surgery for pulmonary tuberculosis.
> Prob. tub. no.1:36-42 '65.   (MIRA 18:12)
>
> 1. Nauchno-issledovatel'skiy institut tuberkuleza (dir.- kand.
> med. nauk G.P. Mochalova, zamestitel' direktor po nauchnoy
> chasti - prof. D.D. Aseyev) Ministerstva zdravookhraneniya
> RSFSR, Moskva.

ACCESSION NR AM4021934   BOOK EXPLOITATION   S/

Vaysberg, Leonid Emmanuilovich

Control and organization of production in metallurgical plants (Upravleniye i
    organizataiya proizvodstva na metallurgicheskom zavode), Moscow, Metallurgizdat,
    1963, 383 p. illus., biblio. Errata slip inserted. 3,650 copies printed.

TOPIC TAGS: industrial engineering, metallurgical plant, planning, automation,
metallurgical plant administration

PURPOSE AND COVERAGE: The book considers the problems of production organization,
the planning and administration of a modern metallurgical plant. The basic direc-
tions of technical progress in ferrous metallurgy, in the development of the modern
metallurgical plant (combine), are pointed out. A great deal of attention is given
to the problems of organizing work on the basis of combined graphs to assure pro-
gressive technical-economic indicators of shops and plants. Special chapters are
devoted to the problems of the use and maintenance of equipment, powers ources,
and material-technical supply of a metallurgical plant. The book is intended for
engineers and technicians in ferrous metallurgy and can be useful to students in
advanced courses of metallurgical higher educational institutions and departments.

Card 1/3

VAYSBERG, L.O.

Photoelectric recording of infrared auroral spectra. Izv. AN
SSSR. Ser. geofiz. no.1:166-167 Ja '61.   (MIRA 14:1)
    (Auroras—Spectra)   (Spectrum, Infrared)

VAYSBERG, M. Ya.

"Evaluation of Justification and Determination of the Effectiveness of Methods of Short-Term Hydrological Forecasts," Meteorologiya i Gidrologiya, Issue No. 1, 1949.

U-1442, 28 Aug 51

VAYSBERG, N. (Sverdlovsk); VESELOV, N. (Sverdlovsk); ZINOV'YEV, Yu.(Sverdlovsk); LEONOV, N.(Sverdlovsk).

("The economics of the socialist·chemical industry." N.N.Kalmykov, S.A. Vaishein. Reviewed by N.Vaisberg and others) Vop.ekon.no.7:150-153   Jl
'56.   (Chemical industries)   (MLRA 9:9)
              (Kalmykov, N.N.)
              (Vaishein, S.A.)

SHIMANSKAYA, R.I.; PLYUSNIN, V.G.; VAYSBERG, N.S.

Use of pyrolysis tar from wastes of the synthetic alcohol
manufacture. Khim.i tekh.topl.i masel 7 no.9:34-37 S '62.
(MIRA 15:8)

1. Ural'skiy filial AN SSSR.
(Petroleum products)

ZINOV'YEV, Yu.N., kand.okonom.nauk; VAYSBERG, N.S., kand. okon. nauk

Raise the level of the training of chemical engineers
in economics. Zhur.VKHO 10 no.4:451-452 '65.

(MIRA 18:11)

VAYSBERG, O.L.

KURT, V.G.; VAYSBERG, O.L.

Starting regular observations of infrared coronal lines. Astron.
tsirk, no.174:11-12 N '56.   (MIRA 10:3)

1. Gosudarstvennyy asteonomicheskiy institut imeni P.K.Shternberga
i Gornaya asteonomicheskaya stantsiya Glavnoy astronomicheskoy
(Pulkovskoy) observatoriya.
                    (Sun--Corona) (Spectrum,Solar)

3(1)

AUTHOR: Vaysberg, O.L.   SOV/33-35-6-13/18

TITLE: Light Absorption in a Mixture of Negative Ions
               O_2^- , H^- and O^-

PERIODICAL: Astronomicheskiy zhurnal,1958,Vol 35,Nr 6,pp 931-932 (USSR)

ABSTRACT: The author gives the distribution of light absorption in
               several mixtures of negative ions. The results are represented
               in 3 figures. It turns out that the observed interstellar
               light absorption can in the best way be explained by assuming
               negative ions of molecular oxygen with a small admixture of
               negative ions of atomic hydrogen.
               There are 3 figures and 5 references, 1 of which is Soviet,
               1. American, 1 Canadian, and 2 are English.

ASSOCIATION: Institut fiziki atmosfery Akademii nauk SSSR (Institute of
               Atmospheric Physics of the AS USSR)

SUBMITTED: May 13, 1958

Card 1/1

VAYSBERG, O.L.

First observations of auroral spectra with a photoelectric spectrometer.
Izv. AN SSSR. Ser. geofiz. no.8:1277-1278 Ag '60.   (MIRA 13:8)

1. Akademiya nauk SSSR, Institut fiziki atmosfery.
            (Auroras—Spectra)

86213

3,1810

S/049/60/000/008/015/015
E201/E191

AUTHOR: Vaysberg, O.L.

TITLE: First Observations of the Auroral Spectra Obtained with a Photoelectric Spectrometer

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1960, No. 8, pp. 1277-1278

TEXT: Beginning in November 1959 auroral spectra were recorded at the "Loparskaya" station with a large-aperture photo-electric spectrometer. The optical parts of the spectrometer are shown schematically in Fig.1. A lens 1 projected the image of the aurora onto an entry slit 2. A rotatable mirror 3 and a collimator 4 directed the light onto a diffraction grating 5. The ruled area of the grating was 150 x 140 mm and it had 600 lines/mm; it concentrated light in the second order. A spherical mirror 6 produced a monochromatic image of the entry slit in the plane of the exit slit 7. A rotatable mirror 9 allowed the use of a second slit 10. Condenser lenses 8 and 11 projected light onto photomultiplier cathodes (not shown in Fig.1). Light filters were placed in front of the entry slit to select the required

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S/049/60/000/008/015/015
E201/E191

First Observations of the Auroral Spectra Obtained with a
Photoelectric Spectrometer

wavelengths. The diffraction grating was rotated with an
asynchronous motor; the scanning rate could be varied from 0.26 to
500 Å/sec. Photomultipliers were of ФЭУ-19М (FEU-19M) type.
The sensitivity of the apparatus was checked by placing a phosphor
loaded with radioactive carbon in front of the entry slit. An
amplifier was connected to the photomultiplier and the amplified
signal was recorded with a potentiometer ЭПП-09 (EPP-09). Fig.2
shows a spectrum of a corona-type aurora of magnitude III. The
spectrum of Fig.2 shows the second positive system of N_2, the
negative system of N_2^+, the first negative system of O_2^+, the O I
line at 5577 Å, other O I and O II lines, as well as N I and N II
lines. It was found that hydrogen emission was usually strong in
diffuse uniform auroral arcs observed to the South of active
aurorae or other arcs. Hydrogen emission was not observed in the
absence of visible aurorae or the band of N_2^+ at 4709 Å (Fig.3).

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8621 3.
S/049/60/000/008/015/015
E201/E191

First Observations of the Auroral Spectra Obtained with a
Photoelectric Spectrometer

Acknowledgements are made to V.I. Krasovskiy who directed this
work and advised the author, to Yu.I. Gal'perin and N.V.
Dzhordzhio for their advice, and to V.G. Babich for help in
experiments.
There are 3 figures and 3 references: 2 Soviet and 1 English.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki atmosfery
             (Physics of the Atmosphere Institute, AS USSR)

SUBMITTED: March 10, 1960

Card 3/3

VAYSBERG, O.L.

Possible mechanism of the retardation of the earth's rotation.
Astron.zhur. 38 no.3:545-549 My-Je '61.   (MIRA 14:6)

1. Institut fiziki atmosfery AN SSSR.
                    (Earth—Rotation)

43440
S/169/62/000/011/069/077
D228/D307

3,1810

AUTHOR: Vaysberg, O.L.

TITLE: Spectro-electrophotometry of auroral hydrogen emission

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1962, 22-23,
               abstract 11G148 (In collection: Polyarn. siyaniya i
               svecheniye nochn. neba, no. 8, M., AN SSSR, 1962,
               36-42 (summary in Eng.))

TEXT: Spectrophotometric H_α-line observations carried out
at Loparskaya ($\phi = 63^\circ 6$, $\Lambda = 126^\circ 7$) are described. Recording was
conducted in several selected sky areas in order to obtain the sky
hydrogen-glow distribution during an aurora, and also to determine
the glow region movement. Recording was also carried out of auroral
forms in the background next to these areas. Since various emissions
are registered at a different time in spectral scanning, recordings
were doubled for control purposes. Observations showed that hydro-
gen emission is, as a rule, concentrated in one, mostly southerly ·

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Spectro-electrophotometry ...

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D228/D307

homogeneous arc. In the initial stage of an aurora this arc appear-
ed to the south of zenith and moved southwards, when the Hα-line in-
tensity then increased. The intensity of the band (0,2) N_2^+ $\lambda4709$ Å
grew simultaneously. The arc usually reached $Z \approx 75$-80°. Then a
second (and sometimes a third) arc appeared and also moved south-
wards; no Hβ is detectable in it. 10-20 minutes after the visible
approach of the arcs a group of rays passed along the upper arc from
west to east, then bright active forms (auroral splashes) appeared.
Hβ sometimes weakened after a splash and moved northwards. Apart
from southerly homogeneous arcs, no intensification of the Hβ -line
as compared with background was detected in any auroral forms. A
slow diminution of brightness with altitude was noted in a 'hydrogen
arc'. The appearance of arcs with hydrogen emission only at large
zenith distances and the failure of attempts to record such arcs
at the zenith, together with the high angular spread and the slow
brightness diminution in a 'hydrogen arc', lead to the supposition
that a 'hydrogen arc' stems from a projection effect or from the
Van Rein effect. The visible hydrogen field section is governed by
the superposition of the altitudinal and the latitudinal glow dis-
Card 2/3

Spectro-electrophotometry ...

tribution. The $H\beta$ -line was not once observed in the absence of visible glow, nor when the glow was sometimes very weak. Cases of diffuse hydrogen-emission glow were noted, too, over much of the sky to the north of zenith. The ratio of $I_{H\beta}/I_{4709}$ Å may reach 1.5 in hydrogen fields and is much less than 1 in all auroral forms. No detailed relation between the appearance of hydrogen emission and the variation of the magnetic field's H-component was detected. Hydrogen emission was absent on magnetically quiet days; bright hydrogen fields appear on nights with magnetic storms and intense auroras. Negative coils are connected with the southwards movement of the hydrogen field.
$\underline{/}$ Abstracter's note: Complete translation $\underline{/}$

Card 3/3

43441

S/169/62/000/011/070/077
D228/D307

3,1810

AUTHOR: Vaysberg, O.L.

TITLE: Spectro-electrophotometry of N_2, N_2^+, OI, and NII
               emission in auroras

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1962, 23,
               abstract 11G149 (In collection: Polyarn. siyaniya
               i svecheniye nochn. neba, no. 8, M., AN SSSR, 1962,
               43-49 (summary in Eng.))

TEXT: Results are given for the photoelectric recording of
several auroral spectra in the regions λ 3100-5600 Å and λ 6000-9500
Å. Besides the molecular band systems; the equipment's sensitivity
allowed seven atomic lines to be recorded: λ 5577 Å [OI], the doub-
let λ 6300-6364 Å [OI], λ 8446 Å [OI], λ 5200 Å [NI], λ 5005 Å [NII],
and the hydrogen lines H_α and H_β. In auroral spectra it is hard to
detect a sharp functional relation between any two emissions, for
example the height dependence. The instrument's sighting beam usu-
ally intersects not one auroral form but a whole series of them --

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Spectro-electrophotometry ...

(luminant layers at different heights). Therefore it is necessary
to seek a tendency rather than a rigid relation. Observations
showed that within the method's precision there is a constant inten-
sity ratio between all nitrogen molecular band systems and the green
line. No systematic difference in the ratio $I_{IHGN_2^+} + I/\lambda_{5577}$ $\mathring{A}$ in
the upper and lower parts of radiant forms was detected. The second
positive N_2 system correlates well with the first negative N_2^+ sys-
tem. The first positive N_2 system is more intense if the auroral
brightness is low. The intensity of the infrared Meynel N_2^+ system
correlates well with the green line. In hydrogen fields the ratio
of the intensity of bands of the Meynel N_2^+ system to the green
line is 1.8 times less than in auroral forms with no hydrogen emis-
sion. It was established that in the laboratory proton-beam excita-
tion of nitrogen molecules the Meynel system is excited 10 times
less effectively relative to the first positive N_2 system than in
electron bombardment. Evidently, much of the glow in hydrogen
fields is induced by encroaching proton flux. According to observa-
tional data no differences were also found in the relative intensi-
ties of molecular band systems and the green line in radiant and
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Spectro-electrophotometry ...   S/169/62/000/011/070/077
D228/D307

homogeneous forms of the same brightness. The resolved oxygen line
λ 8446 Å behaves in auroras like the forbidden line λ 6300 Å (its
intensity lags behind the growth in the intensity of the green line,
which can be taken as a measure of auroral brightness). The non-
linear dependence of the intensity of λ 8466 Å on λ 5577 Å and the
different nature of its behavior in individual cases testify to the
existence of two excitation mechanisms for the line λ 8446 Å. It
may be supposed that in bright low auroras λ 8446 Å is excited by
electron impact with a quite definite $I_{8446 Å}/I_{5577 Å}$ intensity

ratio. An additional secondary mechanism must act at great heights.
The line λ 8446 Å behaves differently in a hydrogen field. Here
we see an almost linear relation between the intensities of the
lines λ 8446 Å and λ 5577 Å. This also speaks in favor of the fact
that so-called "hydrogen arcs" are an effect of geometric projection.
On the approach of a hydrogen field towards the horizon the instru-
ment's sighting beam passes a very thick luminant layer, the bright-
ness of emissions grows, and their ratio remains unchanged. This is
actually observed for all emissions apart from λ 6300 Å, whose in-
tensity may also increase sometimes in hydrogen fields. There are
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Spectro-electrophotometry ...

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D228/D307

grounds for supposing that electron excitation also exists in hydro-
gen fields. The line λ 5003 Å [NII] is on the average relatively
more intense in hydrogen fields as compared with other auroral forms.
$\angle$ Abstracter's note: Complete translation $\angle$

Card 4/4

45202
S/269/63/000/001/023/032
A001/A101

AUTHOR: Vaysberg, O. L.

TITLE: Spectroelectrophotometry of hydrogen emission in auroras

PERIODICAL: Referativnyy zhurnal, Astronomiya, no. 1, 1963, 67,
            abstract 1.51.458 (In collection: "Polyarn. siyaniya i svecheniye
            noch. neba. no. 8", M., AN SSSR, 1962, 36 - 42, English summary)

TEXT: Observations of the Hβ line were conducted at Loparskaya in 1959 -
- 1960. It has been established that its emission is not related to auroral shape.
The Hβ emission is concentrated in the hydrogen field extended along the geomag-
netic parallel.The field extension in latitude amounts to 150 - 1000 km. With
aurora development, the field is shifted southward. Owing to the effect of Van
Rine, auroras have the shape of a uniform arc in observations at large zenith
distances. Appearance of a hydrogen field precedes a bright aurora. Hβ profiles
agree with profiles obtained by other authors. No variations were detected in
the Hβ profile. There are 14 references.

                                                        T. Mulyarchik

[Abstracter's note: Complete translation]
Card 1/1

45203
s/269/63/000/001/024/032
A001/A101

AUTHOR: Vaysberg, O. L.

TITLE: The spectroelectrophotometry of emissions N_2, N_2^+, O I and N II in auroras

PERIODICAL: Referativnyy zhurnal, Astronomiya, no. 1, 1963, 67 - 68,. abstract 1.51.459 (In collection: "Polyarn, siyaniya i svecheniye nochn. neba. no. 8", M., AN SSSR, 1962, 43 - 49, English summary)

TEXT: In 1959 - 1960 spectra of auroras in the regions λ 3100 - 5600 and λ 6000 - 9500 were photoelectrically recorded at Loparskaya. A number of emissions was studied in the mentioned regions. No large difference in behavior of these emissions in different forms of auroras was discovered. The Meynel system N_2^+ was an exception. In comparison with other emissions in hydrogen fields it was ~1.8 times weaker than in other forms of auroras. The intensity ratio λ 6300/λ 5577 dropped with the growth of intensity of λ 5577. The same regularity was observed also in λ 8446. Intensities of bands $2PGN_2$ and $1NGN_2^+$ are well correlated with the green line. The $1PGN_2$ bands in weak auroras are excited relatively stronger.

Card 1/2

The spectroelectrophotometry of...

There are 7 references.

[Abstracter's note: Complete translation]

S/269/63/000/001/024/032
A001/A101

T. Mulyarchik

Card 2/2

L 1547-66   FSS-2/EWT(1)/FS(v)-3   TT/GS/GW

ACCESSION NR: AT5023583   UR/0000/65/000/000/0203/0205

AUTHOR: Vaysberg, O. L.; Shuyskaya, P. K.

TITLE: Anomaly in the pitch distribution of electrons

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow,
1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii.
Moscow, Izd-vo Nauka, 1965, 203-205

TOPIC TAGS: electron distribution, atmospheric interaction, upper atmosphere,
space flight, space probe

ABSTRACT: Pitch distributions of electrons were obtained by means of charged-particle
indicators installed on board the Kosmos-5 satellite. Wide pitch distributions were
observed in the range of longitudes to the west of the South Atlantic anomaly. Nar-
rowing of pitch distributions occurred at $\lambda \approx 0°$ up to $\lambda \approx 20°$, with greatest nar-
rowing in the range of longitudes from +20 to +60°. The narrowing of the pitch dis-
tributions occurred at the exit from the anomaly, and the corresponding decrease in
intensities observed in this region took place at heights >600 km, which makes it
impossible to explain the effect only by scattering in the atmosphere. The effect
was attributed at least partially to the presence of electric fields in the mag-

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ACCESSION NR: AT5023583

netosphere. Electromotive forces due to high conductivity along the geomagnetic force lines should penetrate the region of capture and distort the drift of particles of not very high energy. The systematic change of the width of pitch distribution of electrons with an energy of ~100 kev could be caused by an electric field with an intensity of the order of 10^{-5} v·cm^{-1}. A change in the energy of these electrons would also occur. Orig. art. has: 2 figures and 1 table. [JA]

ASSOCIATION: none

SUBMITTED: 02Sep65   ENCL: 00   SUB CODE: ES, NP

NO REF SOV: 004   OTHER: 007   ATD PRESS: 4C94

Card 2/2

L 3107-66   FSS-2/EWT(1)/ES(v)-3/ECC/EWA(d)/EWA(h)   TT/GS/GW
UR/0000/65/000/000/0406/0417

ACCESSION NR: AT5023611

AUTHOR: Bolyunova, A. D.; Vaysberg, O. L.; Gal'perin, Yu. I.; Potapov, B. P.;
Temnyy, V. V.; Shuyskaya, F. K.

TITLE: Preliminary results of particle studies using the "Elektron-1" satellite

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow,
1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii.
Moscow, Izd-vo Nauka, 1965, 406-417

TOPIC TAGS: particle physics, artificial earth satellite, satellite data analysis,
electron, proton

ABSTRACT: The authors analyze data from the "Elektron-1" to determine the distribu-
tion of radiation in the geomagnetic trap along the orbit of the satellite in Janu-
ary-March 1964. At lower latitudes ($L < 2$) close to the equator, the dominating
particle flux is from electrons of natural origin with energies of 20—200 kev and an
intensity of up to $2 \cdot 10^9$ particles·cm^{-2}·sec^{-1}, and from electrons artificially in-
jected by the high-altitude explosion of 9 July 1962 with energies of several Mev
and a flux of up to $2 \cdot 10^8$ particles·cm^{-2}·sec^{-1}. There are also trapped protons in

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L 3107-66   /5

ACCESSION NR: AT5023611

thic same region with energies of tens and hundreds of Mev and an intensity of up to $5 \cdot 10^4$ particles·cm^{-2}·sec^{-1} ($E > 50$ Mev). At middle latitudes ($2 < L < 4$) there is a sharp increase in the flux of soft protons with energies of a few hundred kev to intensities of no less than 10^8 particles·cm^{-2}·sec^{-1} at latitudes of 30-50° and apparently to no less than $3 \cdot 10^8$ close to the plane of the equator at $L \sim 3$. Their spectrum is softer at higher latitudes. Both protons and electrons are observed at higher latitudes, the low energy electron component ($E > 20$ kev) being extremely variable, especially during increased geomagnetic activity. The boundary of the capture zone in the geomagnetic field during magnetic calm matches the outlines of the "momentary" polar aurora zone which reflects the diurnal asymmetry of the magnetosphere. "In conclusion, we are sincerely grateful to V. I. Krasovskiy, T. M. Mulyarchik, N. V. Dzhordzhio, M. L. Bragin, G. N. Zlotin, I. N. Kiknadze, I. D. Dmitriyeva, T. N. Zaglyadimova, A. K. Nazarova and G. A. Bordoyskiy for great assistance in the work and for useful discussions." Orig. art. has: 8 figures and 1 table.   [14]

ASSOCIATION: none

SUBMITTED: 02Sep65   ENCL: 00   SUB CODE: ES, NP

                                OTHER: 008   ATD PRESS: 4/05

NO REF SOV: 009
Card 2/2

L 8118-66   FSS-2/EWT(1)/FS(v)-3/FCC/EWA(d)/EWA(h)   TT/GW

ACC NR: AP6000306	SOURCE CODE: UR/0293/65/003/006/0890/0902

AUTHOR: Vaysberg, O. L.; Shuyskaya, P. K.

16
B

ORG: none

TITLE: Distribution of electrons with E > 40 kev by pitch angles in the inner belt, based on data of "Cosmos-5"

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 6, 1965, 890-902

TOPIC TAGS: satellite data analysis, satellite orientation, radiation belt, satellite stability, electron distribution, electron energy level |2

ABSTRACT: In June 1962 observers succeeded in obtaining data over several critical revolutions of "Cosmos 5" on the distribution of directed intensity of electrons with energy > 40 kev by pitch angles at altitudes of 1,000—1,600 km. Distributions were plotted of the directed intensity in mirror points on natural geomagnetic coordinates B and L while preserving the magnetic moment. The width of pitch distributions and the corresponding B and L diagrams show the dependence on longitude (or on the local time of the observation point). On the average, the directed intensities computed by pitch distributions are in agreement with the measurements of intensities at an angle of 90° to the force line, which were made during other orbitings through the same drift envelope at longitudes close together. In Pacific longitudes, the directed intensity

Card 1/2   UDC: 550.388

L 8118-66

ACC NR: AP6000306 O

on the drift trajectories running in the region of the South-Atlantic anomaly at an altitude of 250 km reaches $2 \cdot 10^6$ electron/$cm^2 \cdot$ sec $\cdot$ strad for $L = 1.5$. The width of the pitch distribution remains large in the zone of the South-Atlantic anomaly and thereafter. At longitudes $> 0°$ during the daytime the pitch distributions contract, and the intensity along the drift trajectories decreases correspondingly. This phenomenon, evidently, cannot be entirely the result of Coulomb scattering. The variations observed in pitch distributions and intensities, their changes in individual orbiting revolutions, and the systematic decrease of pitch distributions and intensity at longitudes $> 0°$ are a weighty argument in support of the existence in the magnetosphere of electric fields of ionospheric origin with a strength of up to 10^{-4}—10^{-5} v/cm. At present, additional analysis of the available material is being conducted in order to evaluate the effect of diurnal and longitudinal factors on the pitch distribution of trapped particles. There are reasons to assume that the measurement of the variations of intensity and pitch angles of soft electrons, which play an important role in the excitation of auroras and in the energy balance of the upper atmosphere, may serve also as an effective means for the study of electric fields and circulation in the upper atmosphere and magnetosphere of the Earth. Orig. art. has: 5 formulas and 9 figures.   / [JJ]

SUB CODE: AA, SV/ SUBM DATE: 27Feb65/ ORIG REF: 008/ OTH REF: 013/ ATD PRESS:
4145

Card 2/2

L 14499-66   EWT(1)/EWT(m)/FCC/EWP(t)/EWP(b)   IJP(c)   JD/GW
SOURCE CODE: UR/0203/66/006/001/0135/0137

ACC NR: AP6006668

AUTHOR: Vaysberg, O. L.

ORG: Institute of Physics of the Atmosphere, AN SSSR (Institut fiziki atmosfery AN SSSR)

TITLE: On the pitch distribution of protons in auroras

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 1, 1966, 135-137

TOPIC TAGS: proton, aurora, angular distribution, radiation intensity, hydrogen emission, geomagnetic force line

ABSTRACT: It is assumed that some protons penetrate into auroras at low velocities. A detailed analysis of line profiles proved that at velocities of some hundreds of km/sec, the differential energy spectrum of particles changes according to the law $E_o^{-1.8}$, where E_o is the initial energy of protons. The angular distribution of protons depends upon the profile accepted. The variability of distribution results obtained using different profiles indicates that the proton distribution in auroras cannot be studied by the methods used for studying hydrogen. Formulas are given for determining dependence of radiation intensity upon wavelength or

UDC: 550.388.8

Card 1/2

L 14499-66

ACC NR: AP6006668

Doppler velocity. The radiation intensity was taken from auroral spectra obtained at Loparskaya station. Hydrogen emission was obtained from an auroral belt 100—1000 km wide along a geomagnetic parallel. Integrating the formula of Doppler velocity, the number of hydrogen atoms which were decelerated in the atmosphere was found. Assuming similar deceleration for protons, the differential energy spectrum of penetrating protons can be determined. The spectrum determined by integration differs from that based on the independence of angular distribution of the energy spectrum. The capture of protons by geomagnetic force lines is possible when the proton direction of motion coincides with the force lines. Orig. art. has: 2 figures and 4 formulas.   [EG]

SUB CODE: 04/ SUBM DATE: 07May65/ ORIG REF: 005/ OTH REF: 012/ ATD PRESS:
                                                                    4199

Card 2/2

L 16987-66   EWT(1)/FCC   GW
ACC NR: AP6001540 (N) SOURCE CODE: UR/0384/65/000/006/0024/0030

AUTHOR: Vaysberg, O. L. (Candidate of physico-mathematical sciences)   32

ORG: none   B

TITLE: The aurora

SOURCE: Zemlya i Vselennaya, no. 6, 1965, 24-30

TOPIC TAGS: aurora, magnetic storm, sunspot, geomagnetic field, ionosphere

ABSTRACT: This is a popular report on the occurrence of the aurora, its variety, its beauty and awesomeness, and the attention now being devoted to it, especially in regard to photographic records. Current knowledge of the aurora is reviewed: its association with magnetic storms and its possible relation to sunspots; the theory that the aurora is caused by a stream of charged particles from the sun following a complex path through the geomagnetic field; the occurrence of most auroral displays at heights of 95--120 km (though some have been observed at 80 km) with rays extending to 200-300 km and even, rarely, to 1000 km; the character of the auroral spectrum, consisting of bands of molecular nitrogen and oxygen and lines of atomic nitrogen and oxygen, indicating that the aurora is not due to

Card 1/2   Z

L 16987-66
ACC NR: AP6001540

electrical discharge in the atmosphere; lines of incandescent hydrogen and the
red shift of these lines; and invasion of the atmosphere by low-energy electrons
(about 10 kev), raising the temperature. The types of auroral displays are
examined briefly. Those due to low-energy electrons as well as proton-generated
types are dominant in polar regions. The "red arcs" of the middle and low
latitudes are due to excitation luminescence of the electrical field in the
ionosphere or to photochemical excitation. The author points out that we still
have much to learn about this phenomenon. Orig. art. has: 9 figures.

SUB CODE: 04/   SUBM DATE: none

Card 2/2

2599. RATIONAL UTILIZATION OF COKE OVEN GAS (IN U.S.S.R.).
Kustov, BI. and Vaisberg, Or (Za Ekon. Topliva (Fuel Econ.),
May 1950, (5), 5-9). Percentages of output used for different
purposes are tabulated 33% goes on heating coke ovens and
other internal purposes. This percentage is lower than those
ruling in U.S.A. and Germany, but should be lower still.
Coke ovens should be heated by blast furnace gas where it is
available, and where it is not there in a case for using
producer gas, which can be produced cheaply from low grade
fuel in large plants working on the fluidized bed principal.
This would free coke oven gas for use in synthetic processes
and as fuel. The development of long distance piping of coke
oven gas will improve the economy of supply to the metallurgical
industry and to town s for domestic use.   (L)

METALLURGICAL LITERATURE CLASSIFICATION

1. VAYSBERG, O. P.

2. USSR (600)

4. Coal Preparation

7. Optimum depth of concentrating Kizel coking coals. Ugol' 27, no. 12, 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

2721. PROBLEMS OF THE REPLACEMENT OF COKING COALS WITH LOW TEMPERATURE
COKE. Vaisberg, O.I. (Ugol (Coal, Moscow), Apr. 1957, 30-33). Two
range and successful examples are given of the production of satisfactory
coke. (L).

VAYSBERG, O.P.kandidat ekonomicheskikh nauk.

On replacing coking coal by semi-coke. Ugol' 31 no.4:30-33 Ap '56.
(MLRA 9:7)

1.Ukrainskiy uglekhimicheskiy institut.
(Coke)

Vays berg, O.P

AUTHORS:Litvinenko, M.S. (Dr. of Tech.Sc.), and Vaysberg, O.P.,
        (Cand.Economic Sc.)   68-5-11/14

TITLE: Economics of the removal of sulphur from coke oven gas on
         the Southern Coke Oven Works. (Ekonomika izvlecheniya sery
         iz koksovogo gaza na koksokhimicheskikh zavodakh yuga).

ABSTRACT: The extent of the application of gas cleaning on Southern
         Works during 51-56 is shown in Table 1. Methods of utilis-
         ing sulphur recovered from the gas are briefly discussed.
         It is concluded that the production of sulphuric acid which
         can be used on the spot is the most economical. Technical-
         economical indices of the production of sulphuric acid from
         pyrites and from hydrogen sulphide recovered from coke oven
         gas are compared in Table 2. Two methods of gas desulphur-
         isation are compared - arsenate-soda and vacuo-carbonate.
         The volumes of constructional work involved for the above
         two methods of desulphurisation are compared in Table 3.
         The plant operating on the vacuo-carbonate method is cheap-
         er and simpler to build. The degree of desulphurisation of
         gas attained in 1956 on various Ukrainian works is compared,
Card 1/3 in Table 4, and from this it is concluded that both methods

Economics of the removal of sulphur from coke oven gas on
the Southern Coke Oven Works. (Cont.)   68-5-11/14

are comparable in the efficiency of desulphurisation, but
the arsenate method presents difficulties due to a large
volume (100m^3/day) of highly poisonous effluent and high
soda consumption (400-500 kg/ton of sulphur). The costs
of gas desulphurisation by the above two methods on various
works calculated on the same basis for 1955 were as follows:

Works	Method of Cleaning	Costs per 1000 m^3 roubles	kopeks
Zaporozsk	arsenate-soda	0	68
Zhdanov	" "	2	00
Dnepropetrovsk	" "	3	71
Makeyevsk	vacuo-soda	2	90

High cleaning costs on the Makeyevsk Works were due to high
power consumption. In 1956 the works replaced soda by
potash which resulted in a considerable economy (30-35%) in
power, steam and water consumption. The cost of cleaning
decreased from 2.90 Roubles in 1955 to 1.75 Roubles in 1956.
It is concluded that from works operating gas cleaning, the
installation on the Makeyevsk works is the most economical.
Card 2/3 By utilising waste heat from the coke oven works for the

Economics of the removal of sulphur from coke oven gas on
the Southern Coke Oven Works. (Cont.)   68-5-11/14

regeneration of the absorbing solution, e.g., by utilising
heat of ammonia liquor, as was done on the Kharkov works,
a further decrease in cleaning costs can be obtained. A
comparison of manpower required for cleaning gas by the
above two methods (Table 5) indicates that the vacuo-
carbonate method in this respect is also more economical.
On the basis of the above comparisons it is recommended
that the vacuo-carbonate method of desulphurisation to-
gether with the production of sulphuric acid by wet catal-
ysis, should be widely applied in the coking industry of
the U.S.S.R., while the construction of new plants based
on the arsenate-soda method should be discontinued.

There are 5 tables and 3 Slavic references.

ASSOCIATION: UKhIN.

AVAILABLE:

Card 3/3

VAYSBERG, O. P.

68-12-21/25

AUTHOR: Pozin, B.M.

TITLE: On the Problem of the Economy of Purification of Coke Oven Gas from Hydrogen Sulphide (K voprosu ob ekonomike ochistki koksovogo gaza ot serovodoroda)

PERIODICAL: Koks i Khimiya, 1957, No.12, pp. 49 - 50 (USSR)

ABSTRACT: This is a criticism of the paper by M.S. Litvinenko and O.P. Vaysberg (Koks i Khimiya, 1957, No.5). The present author criticises costs calculation used in the original paper and concludes that the matter of economy of vacuum carbonate and arsenical methods of gas purification should be widely discussed in the journal, Koks i Khimiya, so that objective conclusions can be reached.

ASSOCIATION: Giprogazoochistka

AVAILABLE: Library of Congress

Card 1/1

AUTHOR: Vaysberg, O. L.   08-58-6-12/21

TITLE: On the Economy of Flotation of Coal Slurry and Dust
          (Ob ekonomike flotatsii ugol'nogo shlama i pyli)

PERIODICAL: Koks i Khimiya, 1958, Nr 6, pp 49-51 (USSR)

ABSTRACT: This is a contribution to a previous paper under the
          same title by P. Ye. Sekt, F. F. Teslenko, F. M. Belikov
          and S. A. Levin, published in Koks i Khimiya, Nr 8, 1957,
          p 52.   The present author considers that the
          investigations described in the original paper are
          insufficient for the determination of the economical
          effect of flotation of all coal fines on coal washeries
          at coke oven works.

ASSOCIATION: UkhIN

          1. Coal--Processing   2. Coal--Flotation

Card 1/1

VAYSBERG,P.

Offices of design and technology need direction and help. Prom.
koop. no.6:55-58 Je'55.   (MLRA 8:11)

1. Nachal'nik Tekhnicheskoy i konstruktorskoy kontory Mosoblpromso-
veta   (Efficiency, Industrial)

VAYSBERG, S. Ye.

5281

USSR.

ON THE DISTRIBUTION OF DEUTERIUM DURING ISOTOPIC
EXCHANGE WITH HYDROGEN. Ya. M. Varshavskii and S.
E. Vaisberg (Karpov Physico-Chemical Inst., Moscow).
Zhur. Fiz. Khim. 29, 523-32(1955) Mar. (In Russian)
Factors of the distribution-coefficient functions for D be-
tween two-component systems of all combinations of H_2, CH_4,
C_2H_4, C_2H_2, C_2H_6, NH_3, H_2O, HF, PH_3, H_2S, HCl, AsH_3, H_2Se,
HBr, and HI are evaluated in relation to the spectra of the
compounds and the position in the periodic table of the com-
ponent elements. (G.Y.)

184. ISOTOPIC EXCHANGE OF HYDROGEN IN SATURATED HYDROCARBONS.

VAYSBERG, S. E.

USSR/ Chemistry - Physical chemistry

Card 1/2   Pub. 22 - 25/50

Authors   : Varshavskiy, Ya. M., and Vaysberg, S. E.

Title   : About rules governing the equilibrium distribution of deuterium
               during isotopic hydrogen interchange reactions

Periodical   : Dok. AN SSSR 100/1, 97-100, Jan 1, 1955

Abstract   : Experiments show that the maximum possible deuterium distribution coef-
               ficient should occur during isotopic hydrogen exchange between the hydride
               of the most heavy alkali metal and one of the non-metal compounds of the
               first period. The equilibrium constant of the interchange reaction depends
               upon the nature of the statistical deuterium distribution between the
               reacting molecules and upon the various degree of hetero-dynamism of the

Institution : The L. Ya. Karpov Scientific Research Phys-Chemical Institute

Presented by: Academician V. A. Kargin, July 27, 1954

Periodical : Dok. AN SSSR 100/1, 97-100, Jan 1, 1955

Card 2/2 : Pub. 22 - 25/50

Abstract : hydrogen isotopes in the molecules of both substances. It was established that the very same deuterium distribution rules pertain also to tritium as well as isotopes of other monovalent elements except that the distribution effects will be different. Five references: 4 USSR and 1 USA (1947-1954). Tables; diagram.

VAYSBERG, S.E.

AUTHORS: Varshavskiy, Ya. M., and Vaysberg, S. E., (Moscow).   74-12-4/4

TITLE: Thermodynamic and Kinetic Peculiarities of the Isotope-Exchange-Reaction of Hydrogen (Termodinamicheskiye i kineticheskiye osobennosti reaktsii izotopnogo obmena vodoroda).

ABSTRACT: Deuterium is of particularly great importance especially in organic chemistry, because it makes it possible to determine the way taken by hydrogen in chemical reactions by means of marked atoms. The exchange velocity can serve as a criterion for the structure and the preparedness of reaction of various substances. The article comprises the most important research results in the field of the thermodynamics and kinetics of the isotope exchange reaction of hydrogen; in this connection also general rules governing isotope exchange reaction are derived. The following chapters are dealt with:

I)   The thermodynamics of isotope exchange.
a)   The connection between the distribution coefficient of isotopes and the equilibrium constant of the isotope exchange reaction.
b)   Methods for the statistical computation of equilibrium in isotope exchange.

Card 1/2   c)   Rules governing the deuterium distribution in the isotope ex-

Thermodynamic and Kinetic Peculiarities of the Isotope-Exchange-   74-12-4/4
Reaction of Hydrogen.

change of hydrogen.

d) Experimental data concerning the distribution of the equili-
brium of deuterium in isotope exchange reactions of hydrogen.

II) Some details concerning the reaction kinetics of isotope ex-
change:

a) General problems,

b) On the kinetic equation of the isotope reaction.

c) Limits of the applicability of the kinetic equation of first
order.

There are 2 figures, 5 tables, and 76 references, 36 of which are
Slavic.

AVAILABLE: Library of Congress.

1. Hydrogen-Reaction   2. Isotope exchange-Thermodynamics

Card 2/2   USCOMM-DC-54784

AUTHORS: Varshavskiy, Ya. M., Vaysberg, S. E.   76-32-2-32/38

TITLE: On the Limits of Applicability of the First Order Kinetic
                 Equation for Isotopic Exchange Reactions
                 (O granitsakh primenimosti kineticheskogo uravneniya pervogo
                 poryadka dlya reaktsiy izotopnogo obmena)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 2, pp. 454-459
                 (USSR).

ABSTRACT: The authors investigate the problem concerning the limits of
                 applicability of first order equations for reactions of isoto=
                 pic exchange in dependence upon the degree of deviation of the
                 quantity α (distribution coefficient of isotopes) from unity.
                 The investigation is carried out with the example of a bimcle=
                 cular reaction where any dissociation reaction intendedly is.
                 expressed by a first order equation (as its velocity is limited
                 by the dissocoiation of a component), the greatest part of the
                 association reaction, however, apparently still is bimolecular.
                 The kinetic equation for the reaction of isotopic exchange (taking
                 place according to bimolecular mechanism) is deduced. It is shown
Card 1/3   that this equation is one of second order and practically becomes

On the Limits of Applicability of the First Order
Kinetic Equation for Isotopic Exchange Reactions

76-32-2-32/38

a first order equation only on certain conditions. For this, one
of the following three conditions is sufficient: 1. - When the
coefficient of equilibrium distribu tion of the isotopes is close
to unity. 2. - A small concentration of that component in which
the accumulation of the respective isotope is measured. 3. - Small
concentration of that isotope in the system the accumulation of
which is measured in the respective component. It is shown that
the deviation of the velocity constant of the bimolecular reaction
in the isotopic exchange continuously increases from the velocity
constant calculated according to the first order equation with the
increase of the exchange proportion, and that it tends towards a
certain maximum. This maximum is not greater than twice the mini=
mum value corresponding to the beginning of the exchange.
For a number of values of the isotopic distribution coefficient
the corresponding maximum deviations are calculated which practi=
cally can occur within the range of the concentration changes of
the component and of the isotopes. The extent of this deviation
makes it possible to estimate the degree of non-conformity between
the velocity constant and the kinetic equation of first order and
to determine the limits of applicability of this equation.

Card 2/3

On the Limits of Applicability of the First Order   76-32-2-32/38
Kinetic Equation for Isotopic Exchange Reactions

There are 2 figures, and 12 references, 5 of which are Soviet.

ASSOCIATION: Physico-chemical Institute imeni L. Ya. Karpov, Moscow
(Fiziko-khimicheskiy institut im. L. Ya. Karpova, Moskva)

SUBMITTED: April 15, 1957.

1. Exchange reactions--Mathematical analysis

Card 3/3

5(4)

AUTHORS: Varshavskiy, Ya. M., Vaysberg, S. E.,   SOV/20-122-5-23/56
              Trubitsyn, B. A.

ABSTRACT: The present paper deals with the first investigation
              of the deuterium exchange in liquid hydrogen chloride;
              the isotope-equilibria in several systems which
              contain hydrogen chloride are investigated. Some
              earlier papers are first discussed. It was of
              importance, above all, to obtain a reliable value
              of the distribution coefficient α of the deuterium
              for the isotopic equilibrium between hydrogen chloride
              and the aromatic C-H-bond and to compare its value
              with that of α for the case of an O-H bond and an
Card 1/3   aliphatic C-H bond. Knowledge of these quantities

The Equilibrium Distribution of Deuterium in Hydrogen SOV/20-122-5-23/56
Exchange With Liquid Hydrogen Chloride

is of importance also for the investigation of
deuteron exchange with liquid hydrogen chloride
at present being carried out by the authors. The
authors investigated the equilibrium distribution
between hydrogen chloride and benzene, cyclopentane,
and also water. These investigations were carried
out on liquid-phase systems under pressure. After
the establishment of equilibrium, the liquid hydrogen
was vaporized and the water obtained by neutralization
was then investigated with respect to its deuterium
content. The carrying out of measurements is discussed
in short. In isotope-exchange, equilibrium was
attained from both sides by carrying out experiments
with direct and inverse exchange. The tests concerning
isotope exchange in hydrocarbons were carried out
with an aluminum-chloride catalysis. The data thus
obtained are compiled in a table. They permit the
following conclusion to be drawn: At one and the
Card 2/3 same temperature the values obtained for the isotope

The Equilibrium Distribution of Deuterium in Hydrogen   SOV/2o-122-5-25/56
Exchange With Liquid Hydrogen Chloride

exchange of hydrogen chloride with compounds containing
an O-H bond and also an aromatic or aliphatic O-H bond
are found to agree in practice. The hydrogen exchange
(in the presence of $AlCl_3$) between liquid hydrogen
chloride and a saturated hydrocarbon that contains no
third carbon atom is of special interest. Liquid
hydrogen chloride is suited for the investigation of
the suitability of organic compounds for the reactions
of electrophile substitution by the method of deuteron
exchange. There are 1 figure and 12 references, 9 of
which are Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im.L.Ya.Karpova (Physico-
                Chemical Institute imeni L.Ya.Karpov)
PRESENTED: June 9, 1958, by V.A.Kargin, Academician
SUBMITTED: June 9, 1958

Card 3/3

SAVIN, A.G.; VAYSBERG, S.E.; KARPOV, V.L.; TIKHOMIROVA, N.S.

Diffusion of gases in polymers being subjected to ionizing radiation.
Vysokom. soed. 7 no.8:1427-1429 Ag '65.   (MIRA 18:9)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova AN SSSR, Moskva.

VAYSBERG, S.E.; VARSHAVSKIY, Ya.M.

Dual-temperature hydrogen isotope exchange between a gas-vapor
mixture and a solution of the gas. Zhur.fiz.khim. 37 no.1:87-93
Ja '63.   (MIRA 17:3)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova.

VAYSBERG, S.E.; VARSHAVSKIY, Ya.M.

Di-temperature deuterium exchange in the system water-hydrogen chloride. Zhur.fiz.khim. 37 no.2:307-309 F '63.   (MIRA 16:5)

1.   Fiziko-khimicheskiy institut imeni L.Ya. Karpova.
     (Hydrochloric acid)   (Water)   (Deuterium)

29825
S/020/61/140/006/024/030
B107/B101

＄.2430

AUTHORS: Varshavskiy, Ya. M., and Vaysberg, S. E.

TITLE: Equilibrium distribution of tritium in isotopic exchange of
                hydrogen

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 6, 1961, 1361-1363

TEXT: Data for calculating the equilibrium constants and the distribution
ratio protium - tritium by the method by Urey (Ref. 1, see below),
Bigeleisen - Mayer (Ref. 2, see below) and V. M. Tatevskiy (ZhFKh, $\underline{25}$, 261
(1951)) are not available up to date. The present work gives a method for
calculating roughly the distribution ratio protium - tritium by means of the
so-called β factors. These β factors (Ya. M. Varshavskiy, S. E. Vaysberg,
Usp. khim., $\underline{29}$, 1434 (1957)) are a quantitative measure for the thermo-
dynamic inequality of two isotopes of an element in a certain substance. In
first approximation, they depend only on the number of outside electrons and
occupied electron shells. Thus the β factors of CH_4, NH_3, and H_2O are all
about equal to the β-factor of HF. The β factors for the tritium - protium
exchange in diatomic hydrides (including free radicals) may be calculated
Card 1/5 2

29825

S/020/61/140/006/024/030
B107/B101

Equilibrium distribution of...

from the vibration frequencies of the hydride (ν_H) and the tritide (ν_T):

$$\beta = (\nu_T/\nu_H)\left\{\left[1-\exp(hc\nu_H/kT)\right]/\left[1-\exp(-hc\nu_T/kT)\right]\right\}\exp\left[(-hc/2kT)(\nu_H-\nu_T)\right].$$

The β factors for the tritium - protium exchange at $20^{\circ}C$ are listed in Table 1 and represented as function of the atomic number in Fig. 1. Table 2 gives the calculated distribution ratios at $20^{\circ}C$. $(\alpha = \beta_1/\beta_2)$. There are

1 figure, 2 tables, and 9 references: 6 Soviet and 3 non-Soviet. The three references to English-language publications read as follows: Ref.1: H. C. Urey, J. Chem. Soc., 1947, 562; Ref.2: J. Bigeleisen, M. Mayer, J. Chem. Phys., 15, 261 (1947); Ref. 8: P. Stats, H. Morgan, J. Goldstein, J. Chem. Phys., 24, 916 (1956).

ASSOCIATION: Institut radiatsionnoy i fiziko-khimicheskoy biologii Akademii nauk SSSR (Institute of Radiation- and Physicochemical Biology of the Academy of Sciences USSR)

PRESENTED: May 23, 1961, by A. N. Frumkin, Academician

SUBMITTED: May 23, 1961
Card 2/2

VARSHAVSKIY, Ya.M., doktor khimicheskikh nauk; VAYSBERG, S.E., kand.
     khimicheskikh nauk

     Present-day methods for producing heavy water. Khim.nauka i prom.
                                                      (MIRA 13:8)
     4 no.4:498-509 '59.
                    (Deuterium oxide)

PALETSKIY, G.V.; DANCHENKO, B.K.; CHERNYAYEV, A.F.; ZAGRANICHNOV, G.A.; VAYSBERG, S.E.; YERISKIN, K.I.

Decreasing the distance between electrodes in electrolyzers.
Prom.energ. 15 no.3:20 Mr '60.   (MIRA 13:6)
          (Electrolysis) (Hydrogen)

ACCESSION NR.

BAKLAYEV, Ya.P.; OVCHINNIKOV, L.N., prof., doktor geol.-min.nauk, otv. red.; VAYSBERG, S.I., red.; IZMODENOVA, L.A., tekhn.red.

[Geology and potential of the Tur'insk contact-metasomatic deposits of copper in the northern Urals] Geologicheskoe stronie i perspektivy Tur'inskikh kontaktovo-metasomaticheskikh mestorozhdenii medi na severnom Urale. Sverslovsk, 1959. 141 p. (Akademiia nauk SSSR. Ural'skii filial, Sverdlovsk. Gorno-geologicheskii institut. Trudy, no.37)   (MIRA 13:2)
            (Tur'insk region--geology)

AUTHORS: Vaysberg, S. L., Varshavskiy, Ya. M. (Moscow)

TITLE: Investigation of the two-temperature exchange of
                deuterium in the system water - hydrogen chloride

TEXT: It was sought to determine efficiency of two-temperature columns,
which is important for the concentration of deuterium, and to compare it
with that of rectification. For this purpose, di-temperature isotopic
separation of hydrogen was effected in counter-current columns in the
system hydrochloric acid - gas-vapor mixture of hydrogen chloride and water.
The deuterium content of the water was 0.65 at%, that of the hydrochloric
acid 0.61 at%. Results: The two-component state of the phases may lead to
a shift in the enrichment peak to beyond the current ratio λ, equal to the
partition factor α of deuterium. Maximum enrichment in the given system
at column temperatures of $t = 17^\circ C$ and $t' = 90^\circ C$ corresponded to
$\lambda = 2.7-2.9$, whereas $\alpha_{17^\circ C} = 2.53$. The ratio ψ between the HET on
rectification of water and the HET on di-temperature isotopic exchange has
Card 1/2

Investigation of the two-temperature ... S/076/63/037/002/006/018
B101/B186

been found equal to 0.4. There are 1 figure and 1 table.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova
                    (Physicochemical Institute imeni L. Ya. Karpov)

SUBMITTED: August 17, 1961

Card 2/2

BICHKOVA, K.I. [Bychkova, K.I.], kand.med.nauk; VAYSBERG, S.Ya. [Vaisberh,
    S.IA.], kand.med.nauk

Functional changes under the influence of antiallergic actions in
hemorrhagic syndromes in children. Ped., akush. i gin. 23 no.6:
31 '61.   (MIRA 15:4)

1. Kafedra pediatrii Donetskogo meditsinskogo instituta.
                      (HEMOPHILIA)

L 19692-65   FBD/FSF(h)/EWT(l)/EWG(v)/EEC-4/EEC(t)   Pe-5/Pae-2/Pi-4

AUTHOR: Bazelyan, L. L.; Braude, S. Ya. (Corresponding member   AN
UkrSSR): Vaysberg, V. V.: Krymkin, V. V.. Men', A. V.: Sodin, L. G.

Card 1/2

ACCESSION NR: AP5001411

signal reception. radiation from wall surface was recorded simultane-

10 sec. associela-A was used as a standard source of radiation. A

ASSOCIATION: Instit

SUBMITTED: 27Mar64   ENCL: 00   SUB CODE: AA, EC

NO REF SOV:

Card 2/3

BRAUDE, S. Ya.; VAYSBERG, V.V.

Distribution of thermal and nonthermal radiation components over the galactic disc. Izv. vys. ucheb. zav. radiofiz. 7 no.2:193-201 '64 (MIRA 18:1)

1. Institut radiofiziki i elektroniki AN UkrSSR.

BELKINAN L.I., DRABKIN ... VAYNSHTAM, V.V. KROTEIN V.V., MEN', ...
SODIN ...

Study of the spectra of discrete cosmic radio emission sources at
frequencies below 30 Mc, Auzron, zhur, 42 no.5:514-628 My-Je '65.
(MIRA 18:5)

1. Institut radiofiziki i elektroniki AN UkrSSR.

Card 2/3

L 58385-65   FRD/EWT(1)/E 3(v)/   4

AUTHOR: Bazelyan, L. L., Brande, J. Ia., Vaysberg, V. V., Kryukin,
Men', A. V.; Sodin, L. G.

TITLE: Investigation of the spectra of discrete cosmic radio emission sources at
frequencies below 40 Mc

TOPIC TAGS: cosmic radio emission, radio emission source, radio emission meas-
urement, radio telescope

ABSTRACT: The spectra of 14 discrete sources (in the 20—40-Mc range) were in-
vestigated at the Radio Astronomy observatory of the Institute of Radio Physics
and

470 m apart on an east-west line. Each array consisted of 178 horizontal dipoles.
Pattern width was 4° for 20 Mc and 2° for 40 Mc. Lobe width of the interference

Card 1/4

L 58385-65
ACCESSION NR: AP5015584

pattern was 1.6° for 20 Mc and 0.8° for 40 Mc. Beam declination along the meridian
was regulated by remote-control delay lines. The telescope radiometers were phase
modulated by phase shifting the signal of one of the antennas through that a
frequency of 60 cps. The signals of each antenna were amplified by ni preamplifiers.
The passband of the preamplifiers and of the phase shifter was about 20 Mc. The

were calibrated with a standard-signal generator fed through a calibrated attenuator
and a splitter to the preamplifier inputs.

a constant spectral index from 20 to 1400—3200 Mc (13 sources) and spectra with
a spectral index which is a function of the frequency (5 sources). Orig. art. has:
3 figures and 2 tables.   [DW]

ASSOCIATION: Institut radiofiziki i elektroniki Akademii nauk UkrSSR (Institute
of Radio Physics and Electronics, Academy of Sciences, UkrSSR)

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L 58385-65
ACCESSION NR: AP5015584

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Table 1. Flux densities and mean expected errors for 14 discrete sources

Frequency Mc.	19	25	31	38.5	38	38
Source	S·10⁴ Δ %	S·10⁴ Δ %	S·10⁴ Δ %	S·10⁴ Δ %	S·10⁴ Δ %	S·10⁴ Δ %
				4 5 45		

Card

VAYSBERG, Ya.D.

Horizontal spaces between underground utility installations.
Stroi. truboprov. 8 no.3:15-17 Mr '63.   (MIRA 16:5)

1. Nachal'nik tekhnicheskogo otdela instituta Lengiproinzhproyekt,
Leningrad.
                              (Pipelines)

YAKOVLEV, A.T.; VAYSBERG, Ya.D.; GORSHKOV, V.A., red.

[Designing city gas mains] Proektirovanie gorodskikh
gazoprovodov. Moskva, Izd-vo M-va kommun.khoz.
RSFSR, 1963. 163 p.   (MIRA 17:6)

VAYSBERG, Ya.D. [deceased]

Giving up the hydraulic testing of gas pipelines after their placement on supports. Stroi. truboprov. 9 no.6:36-37 Je '64.
(MIRA 17:12)

1. Lengiproinzhproyekt, Leningrad.

Photo-Electric Method, of Determining Vanadium in Steel.
A. L. Davydov and Z. M. Vaysberg. (Zavodskaya Laboratoriya,
1940, No. 7, pp. 715-723). (In Russian). A detailed study was
made of the conditions under which the formation of the phospho-
vanadium molybdate and phospho-vanadium tungstate complexes
reduced with stannous chloride could be used for the determination
of vanadium. A method based on the formation of the latter com-
plex was developed and was found suitable for the determination of
vanadium contents of 0·1% to 2% with an accuracy of 4%, of the
amount being determined. The time taken varied from 18 to 30
min. depending on the time required to dissolve the sample. A light
filter with maximum transmissibility at 550 mμ is used. 0·1-0·8%
of titanium, 0·1-0·6% of copper, 0·03-0·2%, of arsenic and 0·1-0·8%
of molybdenum do not interfere. 1·5% of cobalt, 0·1 5%, of nickel
and 1-3% of chromium have practically no effect. In the presence
of larger amounts of chromium its effect on the colour of the reduced
solution is determined in a blank test.

CA

7

PROCESSES AND PROPERTIES WORK

A photoelectric method for the determination of vanadium in ores. Z. M. Vaisberg and A. L. Davydov. Zavodskaya Lab. 11, 383-3(1945). The method is based on the formation of phospho-tungstic-molybdic complex and its reduction with SnCl₂. It can be used to det. V in ores contg. 0.02-0.2% of V in the presence of Cr, Ni, Ti, Cu, As, Mo (up to 1%) without their preliminary sepn. Fuse 1 g. of the ore in an Fe crucible with a 7-fold quantity of Na₂O₂, ext. the melt in a small vol. of water, and add 30 ml. of 18 N H₂SO₄. To dissolve MnO₂, add a little 3 N HCl. Add 8 ml. of 7.5 N HNO₃, evap. to 70-80 ml., cool, transfer to a 100-ml. measuring flask; add water to the mark, and mix carefully. Add 8 ml. of H₃PO₄ (1.7) to 20 ml. of the soln. in a 100-ml. Erlenmeyer flask, heat to boiling, add 9 ml. of 5% Na₂WO₄.2H₂O, heat to 92-5°, let the soln. stand for 2 min. Cool, add 1 ml. of 0.5% SnCl₂, transfer to a 50-ml. measuring flask, dil. with water to the mark, mix, and det. the intensity of the color in a 30-mm. layer of the soln. with a yellow-green light filter, and det. V by means of a calibration curve. For samples with less than 0.1% of V better results are obtained by using the photoelec. method. Five references.   W. R. Henn

A 18-15 A   METALLURGICAL LITERATURE CLASSIFICATION

CA

12

Photocolorimetric determination of some opium alkaloids. I. Determining morphine. Z. M. Vaisberg, Yu. A. Malkov, and B. G. Khitman. *Farmatsiya* 9, No. 4, 18–20(1946).—Reactions of morphine with K₄Fe(CN)₆ and with FeCl₃ were studied. Both reagents lack accuracy and specificity. Molybdosilicic acid permits sensitive, accurate photocolorimetric assays even in the presence of various other drugs, including the other opium alkaloids. The procedure is described.   J. P. Smith

ASM-SCA   METALLURGICAL LITERATURE CLASSIFICATION

CA

Photocolorimetric determination of some opium alkaloids. II. Determining codeine and narceine. Z. M. Valsberg, Ya. A. Fialkov, and B. G. Khrizman. *Farmatsiya* 10, No. 1, 26–30(1947); cf. *C.A.* 41, 7053d.— Four concn. factors (Br, Na₂SO₃, NH₄OH, and HCl) and the temp. factor were studied in the photocolorimetric detn. of codeine (I) by bromination. Preferred conditions, with I at 1 g./l., are: 5 ml. I soln., dild. to 10 ml.; 0.5 ml. HCl (concd. HCl dild. 12:1, then 10:1); 1 ml. satd. (15–20°) Br water; after 5 min. 1 ml. excess Na₂SO₃ (6.4 g. in 100 cc. H₂O) above decolorization end point; after boiling and cooling, 0.5 ml. 25% NH₄OH. Observed errors range from −1 to 3%. Presence of other opium alkaloids impairs accuracy; lactose and aspirin do not interfere. For narceine (II) the preferred conditions are: 1 mg. hydrochloride, dild. from initial 5 ml. to 7 ml.; 0.5 ml. HCl (as for I); 0.5 ml. satd. Br water; after 5 min., 1.5 ml. Na₂SO₃ (as for I); after 3 min. at 50°, 0.2 ml. 2.5% NH₄OH. This detn. of II is accurate to within 3%. The colorimetric standards were made up from known solns. of I and II and examd. in a layer 15 mm. thick against a blue filter.   Iulia: F. Smith